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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,278	10/16/2001	Shunichi Kondo	019519-331	2067

7590 11/05/2003

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EXAMINER	
GILLIAM, BARBARA LEE	

ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 11/05/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/977,278	Applicant(s) KONDO, SHUNICHI	
	Examiner Barbara Gilliam	Art Unit 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,9-13 and 15-20* is/are rejected.

7)☒ Claim(s) *7,8 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claims

2. Claims 1 and 3-20 are pending.

Claim 2 was canceled.

3. In light of the amendment, the 35 USC 102(b) rejection over Rode et al. is withdrawn, the 35 USC 103(a) rejection over Tsuji et al. is withdrawn.

4. The indicated allowability of claim 20 is withdrawn in view of further inspection of Sasayama et al., US 6,364,544 B1. Rejections based on Sasayama et al. follow.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3-6, 9, 12, 16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rode et al. in view of Sasayama et al.

a. In US 4,983,498, Rode et al. claim a photopolymerizable mixture consisting essentially of a polymeric binder, an acrylate or alkacrylate or a polyhydric

alcohol, comprising one or more groups which are photooxidizable on exposure in the presence of a photoreducible dye, and one or more urethane groups, a photoreducible dye as a photoinitiator component, a trihalomethyl compound, and an acridine, phenazine or quinoxaline compound which acts as a photoinitiator (claims 1 & 14). The acrylate or alkacrylate is a compound of formula (I) (claim 2). In Example 1, an electrochemically roughened and anodized aluminum support was coated with a solution comprising 2.84 pbw (64%) of a terpolymer as the polymeric binder, 1.49 pbw (33%) of an acrylate or alkacrylate monomer (compounds 1-4), 0.04 pbw (0.90%) of a photoreducible dye as a photoinitiator, 0.03 pbw (0.67%) of a triazine as the trihalomethyl compound and 0.049 pbw (1.1%) of 9-phenylacridine photoinitiator (column 11, lines 42-65 & column 4, line 37 – column 5, line 33). The photopolymerizable mixture of Example 1 meets the present limitations for the photosensitive composition of the present application wherein the polymeric binder meets the present limitations for the same, compounds 1-4 meet the present limitations for the compound having a nitrogen atom and an ethylenically unsaturated double bond and the photoreducible dye and 9-phenylacridine both meet the present limitations for the photopolymerization initiator. Rode et al. also teach the addition of a wide variety of substances as additives including dyes and colored pigments (column 8, line 67 - column 9, line 10). Therefore it would have been obvious to one of ordinary skill in the art to add dyes or colored pigments to the photopolymerizable composition of Rode et al. to provide a clear distinction between the image and background areas after exposure and development. The roughened and anodized aluminum support meets the present limitations for the aluminum support. The plate of Example 1 was exposed using a

metal halide lamp and developed with a developer comprising sodium metasilicate and 1.2 pbw polyoxyethylene ether (column 11, line 67 – column 12, line 17). The developing solution of Example 1 meets the present limitations for the developing solution of the present application wherein the sodium metal silicate meets the present limitations for the inorganic alkali agent and the polyoxyethylene ether meets the present limitations for the surface active agent. Rode et al do not teach the electric conductivity of the developer.

b. In US 6,364,544 B1, Sasayama et al. claim a developing apparatus and a method of replenishing a replenisher for a developer in an automatic developing apparatus (claims 1-5). The type of plates that can be developed with this developer include negative working image materials and photopolymerizable printing plates (column 9, line 60 – column 10, line 38). According to Sasayama et al., developer conductivity rises by natural evaporation of water from the developer and the known conductivity-based replenishing methods cannot deal with the changes of the appropriate replenishing amount of the replenisher due to the natural evaporation of water (column 1, line 54 – column 2, line 5). A non-silicate type processing agent (developer) exhibits an electric conductivity of 39 mS/cm when recovered from plate processing and silicate type processing agents exhibits an conductivity of 55 mS/cm when recovered from plate processing (column 2, lines 6-20). This teaching would suggest the electric conductivity of the unused developer is less than the conductivity of the recovered developer which meets the present limitations of a developer with an electric conductivity in a range of from 2 to 40 mS/cm. Therefore one would expect the silicate and non-silicate developers of Rode et al. to have electric conductivities of 55

mS/cm (or less) and 39 mS/cm (or less) respectively. Further the alkali developer of Sasayama et al. has a pH of 9.0 – 13.5 (column 4, lines 30-33). One of ordinary skill in the art would expect the alkali developer of Rode et al. to have a pH within the range of 9.0 – 13.5 as well. The method taught by Sasayama et al. minimizes the fluctuation of developer sensitivity against the changes in developing conditions (column 2, lines 23-30).

c. Therefore it would have been obvious to one of ordinary skill in the art to one of ordinary skill in the art to make, expose, develop the photopolymerizable printing plate of Rode et al. with a developer with a pH of 9.0 – 13.5 and comprising sodium metasilicate and polyoxyethylene alkyl ether and replenish the developer using the replenishing method of Sasayama et al. in order to minimize the fluctuation of developer sensitivity with reasonable expectation of maintaining the electric conductivity of the developer while using an economic and simple developing unit.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rode et al. in view of Sasayama et al. as applied to claims 1, 3-6, 9, 12, 16, 18-20 above, and further in view of Toshimitsu et al.

a. Rode et al. or Sasayama et al. do not teach the addition of a surfactant to the photopolymerizable composition however it would have been obvious to add a surfactant to the composition to improve coatability of the layer as evidenced by the teachings of Toshimitsu et al. (column 11, lines 41-52 & column 13, lines 10-37).

8. Claims 1, 3, 5, 9-13, 15-16, 18-19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. in view of Sasayama et al.

a. In US 6,514,668 B1, Tsuji et al. teach a photosensitive lithographic printing plate having a photosensitive resin layer formed on an aluminum substrate subjected to electrolytic surface roughening and anodic oxidation treatment, wherein the photosensitive resin layer is made of a photopolymerizable composition comprising an addition-polymerizable ethylenically unsaturated bond-containing monomer also containing a phosphate compound having at least one (meth)acryloyl group, a photopolymerization initiator and a polymer binder (abstract). It is preferred to use a polyfunctional ethylenic monomer having two or more ethylencially unsaturated bonds in one molecule together with the phosphate compound having at least one (meth)acryloyl group (column 4, lines 15-18). Examples of the polyfunctional ethylenic monomer include urethane (meth)acrylates obtainable by reacting a polyisocyanate compound with a hydroxy group-containing (meth)acrylate used in an amount of 20 to 70 wt. % based on the enter ethylenic monomer (column 4, line 57-column 5, line 25 & column 12, lines 37-48). The polymer binder to be used is preferably an alkali soluble polymer with carboxyl groups in its molecule such as a homopolymer or copolymer of (meth)acrylic acid. The preferred acid value of the polymer binder having carboxyl groups in the molecule is from 10 to 250 and a preferred weight average molecular weight is from 5,000 to 500,000 (column 6,lines 45-63). The polymeric binder is used in an amount of 10 to 400 parts by weight relative to 100 parts by weight of the polymerizable ethylenic monomer (column 12, lines 37-48). The polymeric binder of Tsuji et al. meet the present limitations for the polymer binder of the present application

specifically the addition polymer binder having a carboxylic acid group in the side chain. Titanocene or hexaarylbiimidazole is preferred as the photopolymerization initiator because the sensitivity, storage stability and the adhesion are good (column 5, lines 25-44 & column 12, lines 37-48). The titanocene initiator meets the present limitations for the same. The photopolymerizable composition may also contain a coloring agent comprising an organic or inorganic dye or pigment (column 12, lines 49-55) which meets the present limitations for a coloring agent. The roughened and anodized aluminum plate meets the present limitations for the same (column 12, line 66 – column 13, line 36). After the plate is image wise exposed, it is then developed with an aqueous solution containing a surfactant and an alkali to form an image. Suitable alkali agents include inorganic alkali agents and suitable surfactants include polyoxyethylene alkyl ether (column 13, line 55 – column 14, line 14). Tsuji et al do not teach the electric conductivity or the pH of the developer.

b. In US 6,364,544 B1, Sasayama et al. claim a developing apparatus and a method of replenishing a replenisher for a developer in an automatic developing apparatus (claims 1-5). The type of plates that can be developed with this developer include negative working image materials and photopolymerizable printing plates (column 9, line 60 – column 10, line 38). According to Sasayama et al., developer conductivity rises by natural evaporation of water from the developer and the known conductivity-based replenishing methods cannot deal with the changes of the appropriate replenishing amount of the replenisher due to the natural evaporation of water (column 1, line 54 – column 2, line 5). A non-silicate type processing agent (developer) exhibits an electric conductivity of 39 mS/cm when recovered from plate

processing and silicate type processing agents exhibits an conductivity of 55 mS/cm when recovered from plate processing (column 2, lines 6-20). This teaching would suggest the electric conductivity of the unused developer is less than the conductivity of the recovered developer, which meets the present limitations of a developer with an electric conductivity in a range of from 2 to 40 mS/cm. The method taught by Sasayama et al. minimizes the fluctuation of developer sensitivity against the changes in developing conditions (column 2, lines 23-30). Therefore one would expect the silicate and nonsilicate developers of Tsuji et al. to have electric conductivities of 55 mS/cm (or less) and 39 mS/cm (or less) respectively. Further the alkali developer of Sasayama et al. has a pH of 9.0 – 13.5 (column 4, lines 30-33). One of ordinary skill in the art would expect the alkali developer of Tsuji et al. to have a pH within the range of 9.0 – 13.5 as well.

c. Therefore it would have been obvious to one of ordinary skill in the art to make, image and develop a photosensitive lithographic printing plate with a developer comprising an inorganic alkali agent and a polyoxyethylene alkyl ether surfactant wherein the photosensitive printing plate comprises a photosensitive resin layer formed on a roughened and anodized aluminum substrate and the photosensitive resin layer is made of an addition-polymerizable ethylenically unsaturated monomer containing a phosphate compound having at least one (meth)acryloyl group, a polyfunctional monomer containing urethane (meth)acrylate, a titanocene photopolymerization initiator and a polymer binder comprising carboxyl groups based on the teachings of Tsuji et al. with reasonable expectation of obtaining a photopolymerizable printing plate with excellent printing resistance (column 2, lines 41-45). Further it would have been

obvious to replenish the developer using the replenishing method of Sasayama et al. in order to minimize the fluctuation of developer sensitivity with reasonable expectation of maintaining the electric conductivity of the developer while using an economic and simple developing unit.

9. Claim 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al. in view of Sasayama et al. as applied to claims 1, 3, 5, 9-13, 15-16, 18-19 and 20 above, and further in view of Toshimitsu et al.

a. Tsuji et al. or Sasayama et al. do not teach the addition of a surfactant to the photopolymerizable composition however it would have been obvious to add a surfactant to the composition to improve coatability of the layer as evidenced by the teachings of Toshimitsu et al. (column 11, lines 41-52 & column 13, lines 10-37).

Response to Arguments

10. Applicant's arguments filed August 8, 2003 have been fully considered but they are not persuasive.

a. Applicant amended independent claim 1 to include the subject matter of original claim 2 which was objected to as containing allowable subject matter. The indicated allowability of the subject matter of original claim 2 and claim 20 is withdrawn in view of further inspection of Sasayama et al., US 6,364,544 B1.

Allowable Subject Matter

11. Claims 7-8 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. With respect to claims 7 and 8, there is no teaching or suggestion in Rode et al. (US 4,983,498) or Tsuji et al. (US 6,514,668 B1) of an ethylenically unsaturated compound having a nitrogen atom that is an amide of an unsaturated carboxylic acid with an aliphatic polyamine compound or an ester of an unsaturated carboxylic acid and an aliphatic polyhydric alcohol compound as required in the present application. Specifically in Rode et al. hydroxy group-containing esters are intermediate compounds and are reacted with diisocyanates (column 4, lines 37-68). With respect to claim 14, there is no teaching or suggestion in Rode et al. or Tsuji et al. of a cellulose polymer binder.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Gilliam whose telephone number is 703-305-1330. The examiner can normally be reached on Monday through Thursday, 8:00 AM - 5:30 PM.

a. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

b. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Barbara Gilliam

Barbara Gilliam
Examiner, AU 1752
October 30, 2003

JANET BAXTER
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